Teknisk specifikation
SIS-ISO/TS 19157-2:2017

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Geografisk information – Datakvalitet – Del 2: Implementering med XML-schema (ISO/TS 19157-2:2017, IDT)

Geographic information – Data quality – Part 2: XML Schema Implementation (ISO/TS 19157-2:2017, IDT)

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This Technical Specification is not a Swedish Standard. This document contains the English version of ISO/TS 19157-2:2016.

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Dokumentet är framtaget av kommittén för Geodata, SIS/TK 323.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 211, *Geographic information/Geomatics*.

A list of all parts in the ISO 19157 series can be found on the ISO website.

Introduction

This document utilizes encoding rules from ISO 19118 and ISO/TS 19139, and the implementation approach from ISO/TS 19115-3 to define an XML schema implementation of ISO 19157:2013, and the data quality related concepts from ISO 19115-2. This schema can be used to validate conformance of XML instance documents with these conceptual models.

Geographic information — Data quality —

Part 2:
XML schema implementation

1 Scope

This document defines data quality encoding in XML. It is an XML schema implementation derived from ISO 19157:2013 and the data quality related concepts from ISO 19115-2.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 19103:2015, *Geographic information — Conceptual schema language*

ISO 19105:2000, *Geographic information — Conformance and testing*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp/ui/

3.1
document
<XML> well-formed data object

[SOURCE: W3C XML]

3.2
schema document
<XML Schema> XML document containing schema component definitions and declarations

Note 1 to entry: The W3C XML Schema provides an XML interchange format for schema information. A single schema document provides descriptions of components associated with a single XML namespace, but several documents may describe components in the same schema, i.e. the same target *namespace* (3.3).

[SOURCE: ISO 19136:2007, 4.1.55]

3.3
namespace
collection of names, identified by a URI reference, which are used in XML *documents* (3.1) as element names and attribute names

[SOURCE: W3C XML]

3.4
package
general purpose mechanism for organizing elements into groups

EXAMPLE Identification information, metadata entity set information, constraint information.

[SOURCE: ISO 19103:2015, 4.27, modified – Example has been added.]

4 Conformance

4.1 General

The framework, concepts, and methodology for testing, and the criteria to be achieved to claim conformance, are specified in ISO 19105. See also Annex A.

4.2 Metadata for data quality

XML documents containing XML fragments with elements related to data quality and metaquality reports described in ISO 19157 or XML fragments related to data quality elements described in ISO 19115-2 shall pass the test modules defined in A.2.

4.3 Data quality measures

XML documents containing XML fragments with elements related to data quality measures described in ISO 19157 shall pass the test modules defined in A.3.

5 Abbreviated terms

5.1 Abbreviated terms

UML Unified Modeling Language

URI Unique Resource Identifier

URL Uniform Resource Locator

XML eXtensible Markup Language

XSD XML Schema Definition

5.2 Namespaces

XML namespaces defined in this document have URIs that follow the pattern: http://standards.iso.org/iso/19157/-2/xxx/N.M, where xxx is the namespace abbreviation, N is the major version number, and M is the minor version number. The namespace directories include descriptions of the content of the namespace, and links to the base specification it implements and to the normative XML schema location.

The following conventions are used to abbreviate the namespaces used to group XML elements. Definition of namespaces specific to the implementation of ISO 19157 and their rationale are discussed in 6.3. Table 1 includes namespaces that are from schema defined in other specifications and are imported by this implementation. The short string in the left column of Table 1 is used as a prefix to associate an XML element with the namespace. The second column contains an English-language description of the namespace, and the string in the third column is the URI that identifies the namespace. The final column lists the standard from which this namespace is imported. Table 2 lists abbreviations and other information for namespaces used for UML packages defined in ISO 19157:2013 and ISO 19115-2:2009.

Table 1 — External namespace URIs and namespace abbreviation conventions used in this document

Namespace abbreviation convention	Namespace name	Namespace URI	Source
gco	Geographic Common	http://standards.iso.org/iso/19139/gco/1.0	ISO/TS 19115-3
gml	Geography Markup Language	http://schemas.opengis.net/gml/3.2.1/gml.xsd	ISO 19136
xlink	XML linking language	http://www.w3.org/1999/xlink	XML Linking Language (XLink) Version 1.1
xs	W3C XML Schema definition schema	http://www.w3.org/2001/XMLSchema	W3C XML Schema Definition Language (XSD) 1.1 Part 1: Structures W3C XML Schema Definition Language (XSD) 1.1 Part 2: Datatypes

Table 2 — Namespace URIs and namespace abbreviation conventions defined and used in this document for packages defined in ISO 19157

Namespace abbreviation convention	Namespace name	Scope	Namespace URI	ISO UML Package
mdq	Metadata for Data Quality	elements for data quality and metaquality reports	http://standards.iso.org/iso/19157/-2/mdq/1.0	ISO 19157 <<Leaf>> DQ_DataQuality and ISO 19115-2 <<Leaf>> QE_CoverageResult
dqm	Data Quality Measures	elements for data quality measures	http://standards.iso.org/iso/19157/-2/dqm/1.0	<<Leaf>> DQM_Measure
dqc	Data Quality Common	abstract classes required for modular implementation	http://standards.iso.org/iso/19157/-2/dqc/1.0	Implementation Model

6 XML schema and document requirements

6.1 General

This XML schema implementation of ISO 19157:2013 and the data quality concepts from ISO 19115-2:2009 follows the encoding rules stated in ISO 19118, ISO/TS 19139:2007, and the implementation approach from ISO/TS 19115-3:2016, Clause 8.

6.2 Core requirements

The requirements class described in Table 3 defines requirements that shall be met by any XML instance document based on this document.